

SCH4C MASS RELATIONSHIPS OF ATOMS

#1 The atomic number is the small whole number which appears in the upper left corner of each element's box in your periodic table (P.T.)

ex. for bromine Br atomic # = 35
∴ ~~symbol~~ # protons = 35

#2 GIVEN: Fe

NEUTRONS = 28

(a) from P.T, atomic # = 26
= # protons

(b) remember that mass # = #p + #n

$$\therefore \text{mass \#} = 26 + 28 = 54$$

#3 All of these are done in this fashion:

86 ← #neutrons = $86 - 38 = 38$

38 ← Sr ← strontium

← #protons = 38 = #electrons

#4 These are all isotopes → The atomic # is the same (#protons is the same) but mass # differs

#5

$\begin{matrix} 37 \\ 17 \end{matrix} \text{Cl}$ $\begin{matrix} 11 \\ 5 \end{matrix} \text{B}$ $\begin{matrix} 197 \\ 79 \end{matrix} \text{Au}$ $\begin{matrix} 13 \\ 6 \end{matrix} \text{C}$
from
periodic
table

#6 In 100 atoms,

$$\begin{aligned}\text{average atomic mass} &= \frac{(69.09)(62.93u) + (30.91)(64.9278u)}{100} \\ &= \frac{6355}{100} = 63.55u\end{aligned}$$

#7 In 100 atoms,

$$\begin{aligned}\text{average atomic mass} &= \frac{(19.78)(10.0129u) + (80.22)(11.0093u)}{100} \\ &= \frac{1081u}{100} = 10.81u\end{aligned}$$

#8 In 100 atoms,

$$\begin{aligned}\text{average atomic mass} &= \frac{(90.51)(19.992u) + (0.27)(20.994u) + (9.22)(21.990u)}{100} \\ &= \frac{2018}{100} = 20.18u\end{aligned}$$

avg. atomic mass of Ne